

Conceptual

Fire Protection Plan

for

California Crossings Shopping Center

**9200 Block of Otay Mesa Road
East Otay Mesa**

**APN # 646-240-48, TPM 21046,
County Case Number PO6-102,
Environmental Log # 93-19AA**



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by

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Prepared in conformance with the guidelines of the County of San Diego.

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Executive Summary:

This Conceptual Fire Protection Plan is for the California Crossings development, a 355,918 square foot Regional Retail Commercial Center, which is located at 9200 Block of Otay Mesa Road, Immediately east of the SR-125, and west of Harvest Road in East Otay Mesa. The location is Thomas Guide Page 1351-J-1. The site is a 28.5 net acre site. The final graded site will be about 410 feet above sea level. The APN is 646-240-48. This is TPM 21046, County Case # PO6-102, Environmental Log 93-19AA.

The site slopes southward at approximately 4%. The site is disturbed agriculture (mostly tall grass).

The development will consist of a Target retail store of 190,500 square feet, an adjoining major store of 64,028 square feet, and eight other buildings, which include retail stores and restaurants ranging from 5000 square feet to 30,000 square feet. Total square foot of buildings in the development is 355,918 square feet. The Target will have a grocery store. There is no tire storage in any building, no automotive repair, and there is no dispensing of motor vehicle fuel. There will be no storage of hazardous materials or flammable or combustible liquids over Fire Code allowed Exempt quantities for retail, M, occupancies.

This plan, when approved by the RFPD, and the DPLU Fire Marshal, shall apply to all buildings in this development.

Access will be from Otay Mesa Road and from Harvest Road.

The site adjoins Otay Tech Centre to the East and North, SR 125 on the West, Otay Mesa Road on the South, and the Pilot Travel Center and Piper Otay Park industrial development to the west on the other side of the SR-125.

The Rural Fire Protection District will serve the development from its new Station 68 in East Otay.

1. Introduction:

This Conceptual Fire Protection Plan (FPP) has been prepared for the California Crossings retail development. The owner is Otay Mesa Crossing LLC. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and to identify and recommend measures necessary to pursue adequate mitigation of those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions and local fire history. The plan also addresses other on site risks such as structure fires, vehicle fires and potential impacts from incidents on the adjoining properties.

The plan addresses water supply, access (including two access roads) structural ignitability and ignition resistant building features, fire protection systems and equipment, impacts to existing emergency services, defensible space and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that have the objective of protecting the buildings.

This plan will also serve as a Technical Report required by the Rural Fire Protection District insofar as it will address the various structural risks due to the occupancy types and sizes, and the proposed mitigations to reduce such risks.

1.1 Project Location, Description and Environmental Setting:

Project Location:

The California Crossings site is located at 9200 block of Otay Mesa Road, immediately east of the SR-125, and west of Harvest Road in East Otay Mesa. The location is Thomas Guide Page 1351-J-1. The site is a net 28.5 acre site. The pads will be 535' to 555' above sea level. The APN is 646-240-48. This is TPM 21046. The Rural Fire Protection District will provide fire Protection from its new Station 68 located at Bailey Prison. The estimated response distance is 3 miles. Response driving time is about 5 minutes.

The current site slopes southward at approximately 3 to 4%. Elevation at the Northwest corner is 575 feet above sea level. It is 527 feet above sea level in the Southwestern portion of the site. At time of development final average slope will be about 2 to 3% with some 2-1 manufactured slopes around the perimeter. The Southwestern corner of site is 15 feet above Otay Mesa Road. The Southeastern corner is 3 feet above the road. There will be a 680 feet long retaining wall, up to 15 feet high, along the Northern boundary of site. The site is old farmland with disturbed agriculture (tall grass).

A site plan and photos are provided in the Appendix of this plan.

Project Description:

The proposed project is a 351,918 square-foot (SF) regional retail commercial center with parking and associated infrastructure. It is within unincorporated San Diego County and within the Rural Fire Protection District. The site is subject to the General Plan Designation of Specific

Plan Area/21, and is in the Otay Subregional Plan. The Zoning is SA 88 (East Otay Mesa Specific Plan), with a Specific Plan designation of Technology Business Park. The site is currently undeveloped.

A minor amendment to the Multiple Species Conservation Plan (MSCP), Tentative Parcel Map (TPM) and Major Use Permit for shared parking are included as a part of the proposed project. Access would be from Otay Mesa Road and Harvest Road (both public roads). Annexation into the San Diego Rural Fire Protection (SDRFP) District will also be required. The project would be served by imported water from the Otay Water District, and sewer from the East Otay Mesa Sanitation Maintenance District. No extension of sewer or water utilities will be required by the project.

Retail:

The 351,918 SF of retail space would include a Target, three major commercial buildings, one sub-major commercial structure, three shops, and two pads. More specifically, the Target retail store would be located in the northwestern portion of the site and consist of a store area of approximately 190,500 SF. The estimated, approximate, occupant load of the Target store, based on gross square footage, is 6350 persons based on 30 square feet per occupant as specified in Table 1004.1.1 of the 2007 CBC. One of the major commercial structures, "Major C", would be located in the northern portion of the site adjacent to Target. The estimated approximate occupant load of the Major C store is 2134 persons. Actual calculated occupant loads may be less once building interior layouts are designed. Other major commercial structures (Major A consisting of 20,390 SF and Major B consisting of 30,000 SF) would be located in the southern portion of the site along Otay Mesa Road and the SR-125 on-ramp. These structures would be joined with the sub major (10,000 SF) and a building containing shops (9,000 SF total). A 3,300 SF break area would be provided among these structures. The other two shops (Shop 2 consisting of 12,000 SF and Shop 3 consisting of 9,000 SF) and pads (Pad A consisting of 5,000 SF and Pad B consisting of 6,000 SF) would be located along the southeastern portion of the site adjacent to Harvest Road. A public plaza would be provided between Shops 2 and 3. The Target and the three major structures would each have their own loading area. The total building coverage of the project is approximately 28.67%. The maximum building height would be 35-36 feet.

The target store is on its own approximate 12.41-acre parcel. This plan applies to all structures on all parcels in this development.

The proposed retail stores would be open between 9 am or 10 am and 10 pm seven days a week. Employees would be onsite outside of those hours for restocking and cleaning. A total of 250 employees are anticipated; 125 per shift. These employees are anticipated to serve 12,870 customers per day.

Circulation/Parking:

Vehicular access to the project will be from Harvest Road (two entrances/exits) and Otay Mesa Road (one entrance/exit). In the short-term (prior to SR-905), access will be primarily via the

Otay Mesa Road/SR-905 northbound ramp intersection. The Otay Mesa Road/Harvest Road intersection will operate as a right-in-right-out only intersection to provide the project site a secondary access via Harvest Road under short-term conditions until SR-905 Phase 1A is completed. In the long-term with SR-905, the main access to the project site will be via Otay Mesa Road/Harvest Road intersection. The project will have two signalized access driveways and one right-in-right-out along Harvest Road. In addition, the project access along Otay Mesa Road will operate as a right-in-right-out only. However, direct access to the project site from SR-905 northbound ramp will not exist with the completion of SR-905 Phase 1A. Therefore, Mexico bound traffic will either travel westbound towards SR-905/La Media Road interchange or eastbound towards Otay Mesa Road/Enrico Fermi Drive intersection to travel south and across the border until SR-905 Phase IB is completed.

Sidewalks would be four feet wide to accommodate the pedestrian traffic. Pedestrian pathways would also be provided within the shopping center to facilitate pedestrian traffic between shops in the center.

The proposed project would provide 1,512 parking stalls. This would include approximately 762 for Target and approximately 850 for the other commercial uses. Bike stalls are proposed to be located within the sidewalks immediately surrounding the commercial buildings.

Off-Site Improvements:

The anticipated off-site improvements for the project include constructing Harvest Road with full width improvements to the east. Otay Mesa Road will be fully improved as part of the SR-125 project. Grading will occur within the SR-125 right-of-way to the west, and there will be grading onto Sunroad's property to the north. A bus turnout will be installed on Otay Mesa Road.

Environmental Setting:

The consultant visited the site. The site is old farmland with disturbed agricultural. This is typical to most areas in East Otay. Uses around the site consist of the SR 125, Pilot Travel Center and the future Piper Otay Park Industrial Park, to the west of SR 125 and north of Otay Mesa Road. The future Otay Tech Centre is to the east and north of this site. The slopes on and immediately around the site are flat to about 4%. Finished pad elevation will be about 535' to 555' above sea level. Slope of the finished grade onsite will be about 2-3% except for some 2-1 manufactured slopes on perimeter. The vegetation onsite and around the site consists of non-native grassland. There is some non-native vegetation on the southern area of the site, which consists of planted cactus and mulberry trees.

The approximate climate in the area is as follows: Average in summer is around 95 degrees f. In the fall the temperature is about 80 to 88 degrees f. Worst-case Santa Ana winds are 50 mph per the Fire Chief. The minimum temperature in winter is about 30 degrees f.

11. Guidelines for Determination of Significance:

- a. The project should not expose people or structures to a significant risk of loss due to wildland fire. This is due to the type of vegetation, fuel modification around the site, the type of construction and fire sprinklers, the fact that there are no residential occupancies, and the ability to exit to Otay Mesa Road or Harvest Road.
- b. The project should not result in inadequate emergency access due to proximity to the two major roads accessing the property and also the on ramp to SR-125.
- c. No additional Fire Stations will be needed. The estimated response time is about 5 minutes (3 road miles) from the new RFPD Fire Station in East Otay, which complies with the General Plan.
- d. The project will have sufficient water supplies from the Otay Water District, which is an excellent water system.

11.1 Analysis of Project Effects:

11.1.1 Adequate Emergency Services:

Emergency response will be provided by the Rural Fire Protection District from its new interim Station #68 at Bailey Prison on the North end of Alta. A 10-year lease exists between the RFPD and the County. This station is staffed 24/7, year around with seven personnel. There is a structural Type 1 engine and a brush, type 111, engine. The estimated response driving time is 5 minutes, per driving tests by the Fire Chief. The road miles are about 3. In addition, the RFPD Engine Company at Donovan Prison can respond if not committed on another incident. Response is also available from the San Diego City Fire Department, Station 43 at Brown Field in East Otay, and from their ladder truck 6 miles away, and the Chula Vista Fire Department, about 12 minutes via SR 125, via Automatic Aid agreements, if these units are available for response. A future, permanent, fire station is planned for the East Otay Mesa Specific Plan area.

The first alarm response to this facility would be 2 engine companies and a Chief Officer. For a vegetation fire, the initial response is 2 engine companies and a Chief Officer. For a hazardous materials event, the response would include the County Hazardous Materials response team and other Fire Agency resources as requested by the Incident Commander. In addition, numerous other resources are available upon request through the County Mutual Aid system and from CALFIRE statewide.

11.1.2 Access:

- Main access is via Otay Mesa Road or Harvest Road. Onsite fire lane road widths and the road widths for any driveway from the public roads will be at least 24 ' unobstructed. Fire lanes around buildings will be 26' unobstructed to within 150 feet of all portions of the exterior wall of the building. Fire lane roads around any building over 28' high will be 28' wide around entire building. Angle of departure and approach will comply with

RFPD and DPLU Fire Marshal requirements and will not exceed seven degrees (12%) per the Fire Code.

- Onsite roads will be AC paved and designed to support a 75,000 pound fire truck.
- Road grades will be approximately 4.5%. Fire Code maximum is 20% with mitigation.
- Vertical clearance of Fire Lanes to be clear to the sky with no trees, vegetation, or power lines, overhangs, etc, over them.
- The retail center management will maintain the onsite roads.
- The roads must comply with the Fire Code for unobstructed width and grade.
- Turning radius required to be minimum of 28' as measured from inside edge of improvement width, per the County Fire Code.
- Any intersections with traffic lights are required to have Preemptive traffic devices (Opticom) installed by developer, per the RFPD.

11.1.3 Water:

The onsite fire water system will be a public system supplied by the Otay Water District. The available fire flow, as obtained by consultant, from the Water District, is as follows:

- Static pressure: 137.6 PSI
- Residual pressure: 132.9 PSI at 2,500 GPM
- Flow at 40 PSI: 19,297 GPM
- Flow at 20 PSI: 21,561 GPM

This indicates there should be plenty of fire flow and pressure for the development. A minimum of 2,500 GPM at 20 PSI is required in the mains for all WUI developments, per the Fire District. Appendix 111-A of the Fire Code requires 8,000 GPM fire flow for 4 hours for the size of the largest building in this development assuming a building construction type of Type 5-B per the 2007 CBC. Final determination of construction type will be determined by the architect. This could result in a change in required fire flow. A 50% credit for Fire Sprinklers reduces this requirement to 4000 GPM for 4 hours. Therefore, the required fire flow for this development is 4000 GPM for 4 hours at 20 PSI residual. The sprinkler system in the largest building may have a demand of 2,250 GPM, at 52-PSI BOR, as typical for similar Big Box type retail stores. GPM for the sprinklers is not added to the 4,000 GPM. However, if sprinkler flows plus hose demands exceed the 4,000 GPM requirement (which is doubtful), then the highest needed flow and pressure is required. In fact, some manner of pressure reduction might be needed to prevent excessive static pressure in the Fire Hydrants and Fire Engine suction hose. RFPD Fire engine suction hoses are tested to 200 PSI.

The onsite fire water mains will need to be a loop and will need to be a minimum of 10" or 12" diameter, or greater as needed, for proper required fire flows and pressures at acceptable velocities.

Fire hydrants will be located every 350'. Minimum required fire flow in the mains is 4,000 GPM (subject to the final construction type). More may be required due to high piled stock sprinkler demand.

The Water system will comply with the Fire Code and RFPD requirements. Any Fire Pump System must comply with NFPA 20.

More information regarding Fire Protection Systems will be included further in the technical, focused, Fire Protection Section of this plan.

11.1.4 Ignition Resistant Construction and Fire Protection Systems:

Buildings will comply with the applicable Basic and Enhanced Ignition resistant construction requirements of the County Fire Code and with the new Chapter 7-A of the 2007 California Building Code. The buildings will most likely be concrete or masonry, and probably will be tilt up construction. Some of the smaller buildings may be of stucco exterior. Buildings will meet the requirements of the Fire and Building Code WUI requirements for ignition resistant or approved non-combustible construction. All buildings will have internal Fire Sprinklers per RFPD Fire Code requirements. The Target building will be designed as an "Unlimited Area Building". Buildings will have Class A roof assemblies. A Class B assembly can be proposed by Architect as an "Alternative Method" if no Class A assemblies are available for flat roofs, if approved by RFPD and DPLU Fire Marshal. This type of variance was approved by Ralph Steinhoff on 7-28-06, in a previous conversation with consultant regarding another project. There will be no deviations from the Fire or Building Codes, unless the Architect applies for an Alternative Method approval from the Fire District, DPLU Fire Marshal, and the Building Official. Refer to the Technical, focused, Fire Protection Section of this plan for more details. There will also be some construction phase trailers, which would be discussed in a Construction Safety Plan.

11.1.5 Defensible Space and Vegetation Management:

Overview of flammable vegetation within and adjacent to project site:

Results of BEHAVE fire spread modeling:

BEHAVE Fire spread models were generated for the site. The inputs utilized are those approved by the Fire Chief and as used on other recent projects in East Otay done by the Consultant, including the property adjoining this property to the west on the other side of SR-125, and on the east of this property. A BEHAVE Fuel Model 3 was utilized to provide a worst-case grass model. Estimates for the fall 2007 Harris Fire are also included, although that fire did not reach the site.

Inputs:

Summer Fire	Otay Fire	Fall Fire; High Wind	Harris Fire estimates
1 hour fuel moisture: 3%	1 hour fuel moisture: 2%	1 hour fuel moisture; 2%	1 hour fuel moisture; 1%
20 ft wind speed; 20 mph	20' wind speed: 14 mph	20 ft wind: 50 MPH	20 ft wind: 40 MPH
Air temp. 95 degrees f	Air temp: 88 degrees F	Air temp: 88 degrees F	Air Temp; 93 degrees
Slope: 0	Slope: 0	Slope: 0	Slope; 0

Outputs of Model: FM 3; 3' High Grass:

Summer Fire; 95 degrees/ 20 mph wind	Otay Fire	Fall Fire; High Wind	Harris Fire Estimates
Rate of spread; 3.6 mph	Rate of spread: 2.6 mph	Rate of spread: 13.47 mph	Rate of Spread; 11.53 MPH
Flame length: 22'	Flame length: 19.8'	Flame length: 42.2'	Flame length; 41 '
Spotting distance: 0.8 miles	Spotting distance: 0.6 miles	Spotting distance: 2.3 miles	Spotting distance: 2 miles

The vegetation fire threat in the immediate area is not a severe or catastrophic threat. In fact, most of the onsite vegetation will be removed during construction and the site will be paved or have buildings on it, and will have approved landscaping. Adjoining properties will have the same type of vegetation until development. The worst-case fire appears to be the fall fire with a high wind and estimated flame lengths of 42.2'. The BEHAVE model chosen is the worst case and may over predict actual fire behavior. The flame lengths may actually be less but grass fires do have a high rate of spread. Actual fire behavior may be more or less intensive than models can predict. The site, after development, should not present a catastrophic wildland fire threat. A fire on an adjoining property to the north could expose this site, until that property is developed. There is about 48' to 60' from the closest building to the northern property line. There is an 80' wide road on the east of the property and buildings are at least 30' from the property line on that side. Otay Mesa Road on the south is at least 100' wide adjoining the site. On the west is the SR 125 freeway.

Fuel Modification Zones for development will include onsite roads and parking lot. Note: The onsite area will be paved or be covered with buildings, so fuel modification of existing

vegetation will not be an issue. There are some manufactured slopes around the site, which will require fire resistive vegetation.

The vegetation onsite will consist mainly of groundcover, trees, plants and shrubs in the parking lot and on any manufactured slopes.

Per the Architect, the setback from the property line for the Target store and the Major C store will be predominately a 60' setback, with two minor areas having 48'. Most of that area would be paving with some landscaping. Shops and Major buildings at South end of development will have less than a 60' setback from property line. Beyond that property line, is Otay Mesa Road, which is at least 100' wide. On the East side of property is Harvest Road, which is about 80' wide.

The Fire District and State law require a 100' Fuel Modification Zone within the property. It is not required to extend beyond the property unless a fire threat requires such extension, which is not the case with this site. In actuality, 100' should not be needed.

Zone A; Defensible Space; Irrigated wet zone 50' on all sides of all structures, ending at the property line of the development:

This defensible space will be paving with fire resistive trees and landscaping. The landscaping and trees will require an irrigated, maintained, wet zone, unless they are "zeriscape" drought tolerant, fire resistive plants and trees that do not require irrigation. No flammable or combustible growth. No dead or dying vegetation. No dry grass. No grass or native groundcover over 4". Vegetation including grasses and ground cover to be low profile, fire resistive, drought tolerant, high leaf moisture, low fuel volume, less than 4". No tree limbs or canopies are to be within 10' of a structure or equipment. There should be no trees in front of doors, including rolling and lift doors and entrance/exit doors, and windows to stores, as this can effect Firefighting operations, emergency exiting and can result in fire spread into a store. Trees to be 20' between mature canopies, except for palm trees, which will require 40' between trees. However, groups of two or three other types of approved trees may be clustered and then separated 20' between clusters. Examples of a tree allowed beyond 10' is a well spaced and maintained specimen of Coastal Live Oak, sycamore, maple, elm, cottonwood, willow or jacaranda, if determined to be suitable for the area by a landscape architect. Fire resistive shrubs, bedding plants and flowers, may be planted, to a height of 18". Spacing between mature shrubs, and between mature plants, should be 2 times height on slopes less than 20% (minimum 3' apart), 4 times height on slopes 21-40%, and 6 times height on slopes over 40%. Shrubs and plants shall be located away from tree drip lines. No flammable understory allowed under trees. Any fire resistive vegetation under trees should be low growing and the mature height is to be 1/3 height of the lowest portion of the limbs and branches, or 18" max whichever is less, in order to prevent any fire laddering. No combustible trellises or trellises with flammable vegetation within 30' of a building.

Any specimen of approved trees or shrubs must be properly located, spaced, limbed and pruned to a height of 1/3 the height or 6' from the ground, whichever is greater.

No dry grasses, acacia, eucalyptus, palm (unless palms properly maintained and spaced 40' from each other and other trees, on the interior of the development 30 feet or more away from buildings, with no palms on perimeter of development), juniper, cypress, conifer (pine, etc.), olive, pepper, camphor, cedar, bottlebrush, pampas grass, chaparral, sage including purple sage, coastal sage scrub, sagebrush, salvia spp, chamise, California buckwheat or manzanita. See additional prohibited vegetation in the "Prohibited Plant List" in this Section of the plan. The objective is to prevent spread of fire to or from a structure. It is extremely critical to keep flammable vegetation and ornamental vegetation away from the structure so as to prevent a path for fire to reach the structure. No chipped biomass or wood bark within 30' of structures. No vegetation allowed on any trellises.

No LPG tanks within 30' of a structure. No flammable vegetation allowed under or around LPG tanks for 30'.

Zone B (from 51' beyond structure or equipment to a minimum of 100' from all sides of structure or equipment or to property line whichever is closer:

This Zone may or may not be an irrigated wet zone. No dry or dead grass. If vegetation or trees are planted, irrigation may be needed. Zone to be limited to low fuel volume, high leaf moisture, drought tolerant fire resistive, low profile fuel (native grasses or groundcover less than 4") and fire resistive shrubs and trees. No dead or dying vegetation is allowed. Trees must be properly limbed up (1/3 height or 6' whichever is greater), dead fuels removed, flammable under story removed. Fire resistive shrubs or plants may be under trees but must be limited to same height as in Zone A. Specimens of approved and properly maintained trees such as coastal live oak, sycamore, maple, elm, cottonwood, willow, jacaranda or other high leaf moisture/low oil content trees may be used if deemed suitable for this area by a landscape architect. Trees to be 20' between mature canopies. Clusters of 2 or 3 trees may be planted if there is 20' between mature canopies of the clusters. No dry grass, no acacia, eucalyptus, palm (except when palms are spaced 40' apart and maintained, as per Zone A), No palms should be located around perimeter of the site. juniper, pepper, olive, bottlebrush, cypress, conifer, cedar or pampas grass. No chaparral, sage, including purple sage, chamise, salvia spp, coastal sage scrub, sagebrush, California buckwheat, or manzanita. All exotics shall be removed. See additional list of prohibited vegetation in the "Prohibited Plant List" in this Section of the plan. Approved fire resistive shrubs and plants may be used if kept below 3', spaced the same as for Zone A, and kept free of all dead fuel.

Proper erosion control and soil stability provisions are needed in each zone. An adequate amount of vegetation is needed to prevent erosion and to protect slopes.

Note: With the current drought, irrigation could become curtailed. Also freezing can occur. The landscape architect needs to consider this in the landscape planning, so that vegetation doesn't die. Any dying or dead vegetation must be removed.

Roadside Fuel Modification (Fire Code; Section 17 of Appendix 11-A):

There shall be Fuel Modification Zones on development side of both access roads; Otay Mesa Road and Harvest Road. 10' fuel modification is required on the side of each road, facing the development. The zone may be a landscaped, irrigated wet zone, utilizing fire resistive vegetation including fire resistive trees. Ground cover to be 4" or less. Any shrubs to be 2' or less. The same fuel modification criteria as for Zone A should be used.

Note: There shall be no flammable vegetation or flammable trees on offsite roadsides, fuel modification zones, landscaped areas, slopes or elsewhere onsite. Any trees shall be fire resistive and shall not be of a type prohibited in this plan. Single trees, or clusters of up to 3 trees, should be spaced at least 20', and preferably 30', between mature canopies. Palm trees to be spaced 40' apart. Trees to be limbed up 1/3 height or 6' whichever is greater and have no flammable vegetation under them. Street trees, and trees along fire lane access roads leading to buildings from the public access roads, to be limbed up to 14'6" and the mature trunk shall not intrude into the roadway. Mature canopies must not intrude into the fire lanes. Trees to be planted at least 10' from the sides of the public access roads and from buildings.

Any fire resistive vegetation under trees to be limited in height to 1/3 height of lowest limb or branch or 18" whichever is less. Fire lanes around the buildings to be clear to the sky with no vegetation, in order to allow aerial fire truck operations. They will be maintained in compliance with this plan, by the LMD, other County approved legal entity, or owners, or maintained by the property managers. Responsibility for the maintenance shall be included in a legal document to approval of County DPLU such as a contract with tenant, CC&R's or deed encumbrances. The property owner shall assure that proper roadside vegetation is done on an ongoing basis. No vegetation prohibited in this plan shall be planted in this area. Erosion control and soil stability must be provided. Note: The owners of the development have no control over what the County plants, or requires to be planted, on public roads. The County needs to assure that any plants or trees planted on public roads are fire resistive and comply with this plan, including compliance with the Prohibited Plant List in this plan. For example, palm trees should not be planted around perimeter of the development as they can be ignited and result in casting burning debris into the development and onto roofs.

Open space and Sensitive Biological Preserve Area Under Control of the Resource Agencies and the County:

Fuel modification may not be allowed in any sensitive biological preserve, wetland buffers, vernal pools, etc and permission is required from the County and resource agencies in order to do any fuel modification in those areas.

Slopes:

Trees, shrubs, plants and other vegetation on any manufactured or natural slopes on pads are to comply with the spacing, height, and other criteria, such as prohibited types of vegetation, for fuel modification as found in this plan for the Fuel Modification Zones. The maximum average onsite slope will be about 4% except for the 2-1 manufactured slope on perimeters.

Cal Trans should be required to maintain any vegetation they plant on the sides of the SR-125. This shall not be a responsibility of this developer. Such maintenance of Cal Trans property, or any property between the SR-125 and this development, should be enforced by the Rural Fire Protection District.

LPG Tanks:

30' of clearance of native vegetation, weeds and brush shall be provided under and around any LPG tanks. It is doubtful that there will be any such tanks other than for the emergency generator.

Water Detention Basins:

Any detention basins must be kept clear of any flammable vegetation on an annual and ongoing basis.

General Comments:

Fuel Modification may consist of mowing or otherwise cutting or removing flammable vegetation or may consist of properly spaced and installed, approved, irrigated, and maintained fire resistive landscaping. No vegetation from the Prohibited Plant List in this section of the plan should be planted or remain. The detailed Landscape plans for the development shall set forth the size and configuration of the required fuel modification zones from buildings, equipment and roads. The plans shall also describe in detail the name of the plant, shrub, tree, etc., spacing and height of vegetation in the zones, including trees. The building owners shall be responsible to maintain the vegetation fire safe on an ongoing basis.

Outside of the development, there might be street trees and vegetation planted, irrigated and maintained by the County.

The developer will have no control over the type of vegetation the County may require as planting in the offsite areas and streets. There are also some areas onsite, which would be landscaped, irrigated and maintained by the developer. This includes slopes on the pad. It is important to not plant vegetation that could catch fire from airborne burning debris coming from an offsite fire. This is called "spotting". Palm trees, Eucalyptus, and certain other trees are susceptible to this. If the County requires such trees, (which the consultant strongly recommends against) they must be properly maintained, spaced, and irrigated with no flammable understory.

It is anticipated that the property to the north will be developed. At that time, the Fire District will require Fuel Modification on that site. In the interim, any flammable vegetation on that property within about 50' of this property should be required by the Fire District to be maintained.

The following list of prohibited plants should be followed:

Prohibited Plant List:

Certain vegetation is considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical. Physical properties that contribute to high flammability include large amounts of dead material retained within the vegetation, rough or peeling bark, and the production of large amounts of litter. Chemical properties include presence of oils, resins, wax, and pitch. Any such existing vegetation should be removed and new ones should not be introduced.

Fuel Modification Zones

SOME EXAMPLES OF Prohibited Plant Material

Trees

Botanical Name	Common Name
Abies species	Fir Trees
Acacia species	Acacia, wattle
Agonis juniperina	Juniper Myrtle
Araucaria species	Norfolk Island Pine, Monkey puzzle tree, Bunya Bunya
Callistemon species	Bottlebrush (lemon, rose, weeping)
Calocedrus decurens	Incense cedar
Casuarina spp	Beefwood
Casuarina cunninghamiana	River She-Oak
Cedrus species	Cedar including Atlas and Deodar Cedar
Chamaecyparis species	False Cypress
Cinnamomum camphora	Camphor Tree (okay in zone 2)
Conifers	
Cryptomeria japonica	Japanese Cryptomeria
Cupressocyparis leylandii	Leyland Cypress
Cupressus species	Cypress (Tecate, Arizona, Italian, others)
Eucalyptus species	Eucalyptus
Juniperus species	Juniper
Larix species	Larch (European, Japanese, Western)
Leptospermum species	Tea Tree (Australian, tea)
Lithocarpus densiflorus	Tan Oak
Melaleuca species	Melaleuca (Flaxleaf, Pink, Caejput tree)
Olea europea	Olive Tree <i>(if any flammable understory or if not properly spaced or not located properly away from structures)</i>
Palm species	Palms (unless spaced 40' apart, away from buildings and perimeter)
Picea spp	Spruce
Pinus species	Pine (calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey).
Platycladus Orientalis	Oriental Arborvitae
Podocarpus species	Fern Pine (Fern, Yew, Podocarpus)
Pseudotsuga macrocarpa	Bigcone spruce
Pseudotsuga manziesii	Douglas Fir
Schinus sp	Pepper Tree; California and Brazilian
Sequoia sempervirens	Coast redwood
Tamarix species	Tamarix (Tamarisk, Athel tree, Salt Cedar,)
Taxodium species	Cypress
Taxus spp.	Yew (English, Western, Japanese)
Thuja spp.	Arborvitae/Red Cedar
Tsuga species	Hemlock (Western, Mountain)

Groundcovers, Shrubs, Perennials, & Vines

Botanical Name	Common Name
Acacia species	Acacia
Adenostoma fasciculatum	Chamise, greasewood
Adenostoma sparsifolium	Red Shanks
Agropyron repens	Quackgrass
Anthemis cotula	Mayweed
Arbutus menziesii	Madrone
Arctostaphylos species	Manzanita
Arundo donax	Giant Reed or Cane
Artemesia Species	Sagebrush
Artemesia abrotanium	Southernwood
Artemesia absinthium	Wormwood
Artemesia californica	California Sagebush
Artemesia caucasia	Silver Spreader
Artemesia dracuncul	True tarragon, French tarragon
Artemesia tridentate	Big Sagebrush
Artemesia pycnocephala	Sandhill Sage
Atriplex species	Saltbush
Avena Fatua	Wild Oat
Baccharis pilularis	Coyote Brush (bush)
Baccharis species	Coyote Brush (bush)
Bambusa species, bamboos	Bamboo
Bougainvillea species	Bougainvillea
Brassica species	Mustard, (Field, Black, Yellow)
Bromus rubens	Foxtail, red brome
Cardera draba	Noary Cress, perennial peppergrass
Carpobrotus species	Ice Plant, Hottentot Fig
Castanopsis chrysophylla	Giant chinuapin
Cirsium vulgare	Wild Artichoke
Conyza bonariensis	Horseweed
Coprosma pumila	Prostrate Coprosma
Cortaderia selloana	Pampas Grass, Jubata grass
Cuscuta pentagona	Dodders, angel hair
Cytisus species	Scotch Broom, French Broom, Canary Island Broom
Dodonea viscosa	Hopseed Bush
Eriodictyon spp	Yerba Santa
Eriogonum species (E. fasciculatum)	California Buckwheat, Common Buckwheat
Foeniculum Vulgare	Common Fennel
Fremontodendron species	Flannel Bush
Hedera species (H. canariensis, H. Helix)	Ivy (Algerian, English)
Heterotheca grandiflora	Telegraph Plant
Hordium Leporinum	Hare, Foxtail, Annual Barley, Wild Barley
Juniperus species	Juniper

Lactuca serriola	Prickly Lettuce
Larix spp.	Larch
Larrea tridentata	Creosote bush
Lolium Multiflorum	Italian rye grass, annual ryegrass
Lonicera japonica	Japanese honeysuckle, Hall's honeysuckle
Mahonia species	Mahonia
Mimulus aurantiacus	Sticky monkeyflower
Miscanthus species	Eulalie Grass, Japanese silver grass
Muhlenbergia spp.	Deer Grass
Nicotiana species (N. bigelovii, N. glauca)	Tobacco (Indian, Tree)
Pennisetum setaceum	Fountain Grass
Perronskia atripliciflora	Russian Sage
Phoradendron spp (also Arceuthobium spp)	Mistletoe
Pickeringia 'montana'	Chaparral Pea
Platycladus orientalis	Oriental arborvitae
Rhus species (R. diversiloba, R. laurina, r. lentii)	Sumac (Poison oak, laurel, Pink Flowering) (also worker/firefighter safety)
Ricinus communis	Castor Bean
Rosmarinus species	Rosemary
Rubus spp.	Bramble
Salvia species (Numerous)	Sage including coastal sage scrub
Salsola australis	Russian Thistle, or tumbleweed
Solanum xanthii	Purple Nightshade (toxic)
Spartum junceum	Spanish broom
Silene maritima	Milk Thistle
Thuja species	Arborvitae
Ulex europaeus	Gorse, forze
Urtica urens	Burning Nettle
Vincetoxicum	Periwinkle
Rhus lentii	Pink Flowering Sumac

Notes:

DO NOT PLANT, OR RETAIN, ANY OF THE ABOVE LISTED VEGETATION IN ANY VEGETATION MANAGEMENT (FUEL MODIFICATION) ZONE, LANDSCAPED AREA, OR IN ANY MEDIAN OR PLANTER. DO NOT USE ANY OF THE ABOVE LISTED TREES OR SHRUBS AS STREET TREES, OR SHRUBS. This list is not all-inclusive as lessons are learned regarding fire resistance during every fire. The absence of a plant from this list does not necessarily mean it is fire resistive. All plant material will burn under the right circumstances. Also, other plants and trees can become fire hazards under drought conditions or due to lack of maintenance and irrigation. All vegetation used at this development must be to approval of the Fire Chief. Landscape architects may submit a report to the Fire Chief with written justification and certification as to the fire resistiveness of certain plants, for review of the Fire Chief.

Additional plants that are considered undesirable due to their invasiveness nature are detailed on the California Invasive Plant Council website.

Maintenance:

Ongoing maintenance and irrigation is necessary so that onsite vegetation, including all slopes and any slopes will not be ignited. This includes weeding, pruning, limbing, and irrigation. Vegetation management must be done at least annually, before May 1, and more often as needed to maintain fire safety. It is anticipated that this development will have regular landscaping service. Trees should be limbed up 1/3 their height, or 6' (street trees to be limbed to 14'6") spaced 20' between mature canopies, (palms 40' between mature canopies, located away from buildings and away from perimeter) and should not have any flammable, non-fire resistive, vegetation under them. Any fire resistive shrubs under them that should not be over 1/3 the height of the lowest branch or limb of the tree or 18" whichever is less. Any shrubs or other understory must be fire resistive. There must not be any tree limbs or canopies within 10' of a building or other structure or equipment. Any grass should be kept to 4" and irrigated. There must be no flammable vegetation, dead grass or weeds.

There shall be no vegetation or trees that obstruct Fire Department operations, including access, raising of ladders, or use of fire hydrants and Fire Department connections. No vegetation or trees at Fire Hydrants or FDC's and no trees over Hydrants or FDC's. Onsite Fire Lane access roads should be kept clear to the sky with no overhanging canopies.

Some general recommendations are provided in the following sections:

Planting, Spacing and Maintenance Guidelines:**General Information Regarding Vegetation Management:**

- A. Maintenance includes irrigation and regular, ongoing (annual and more often as needed) removal of weeds, dead materials, and other undesirable flammable vegetation required to keep the area fire safe.
- B. As new plantings mature, they must be thinned to maintain the recommended spacing and heights.
- C. The terms "fire wise", "fire resistant" or "fire retardant" are misleading. All vegetation and plants will burn if exposed to enough heat. Because something is considered fire retardant or fire resistant does not mean that unlimited quantities can be planted or that they will somehow slow down a fire.
- D. Limit or eliminate use of plants, which are known to be flammable.
- E. Limit use of plants, which develop large amounts of foliage, branches, or dead material.
- F. Limit use of plants, which develop deciduous or shaggy bark.
- G. Limit use of plants, which develop dry or dead undergrowth.

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- H. Recommended spacing of trees is a minimum of 20' feet between mature canopies (40' for palms, with no palms within 30 feet of a building or on perimeter of development).
 - I. Tree canopies shall not reach to within 10' of equipment or structures.
 - J. Limb up trees 1/3 height or 6' from ground. Street trees to be limbed up 14'6".
 - K. No tree canopies overhanging any onsite fire lane road.
 - L. Shrubs to be fire resistive. Shrubs shall be spaced to create a firebreak between groupings.
 - M. Eliminate potential for vegetation on ground (ground fuels) to spread fire into trees (aerial fuels). This is known as eliminating the "fire laddering effect".
 - N. Configure plantings so that they are spaced and maintained so as not to create a direct path from native growth to a structure.
 - O. All plant species must be limited to those approved by the Fire District for this area.
 - P. Prohibit massing of vegetation adjacent to structures, especially under eaves, overhangs, windows, vents, decks, within 10' of chimneys, etc.
 - Q. Vegetation management requirements and the provisions for continuous maintenance must be documented on landscape plans, any CC&R's, and deed encumbrances. It must be absolutely clear to owners and managers that they have a legal responsibility to maintain a fire safe defensible space and Fuel Modification Zones on all sides of the structures and equipment in compliance with this plan and the Fire District requirements. The Fire Chief shall enforce all vegetation management requirements, and structural protection requirements on the private property, and assure vegetation management requirements are met. Yearly maintenance, before fire season (typically May 1, including during construction), and more often as needed, is required to reduce fuel volumes, eliminate weeds, remove dead vegetation, cut grass, limb up and prune, remove down and dead fuels, remove flammable under story, etc.
 - R. Maintenance is also required after any storms or high winds or freezes to remove down and dead vegetation and combustible debris from properties and zones.
 - S. If new planting is desired in areas of retained native vegetation, then an irrigation system shall be designed to sustain new plantings as needed. Caution should be used so as to not over irrigate natives and thereby increase the dead to live fuel ratio; negating the high leaf moisture.
 - T. Caution must be used so as to not cause erosion or ground (including slope) instability, or excessive water runoff, due to planting, landscaping, vegetation removal, vegetation management, or irrigation.

- U. No combustible netting, matting, etc., in landscaped areas, on slopes, etc.
- V. Permission is required from offsite parcel owners if any fuel modification is needed offsite of any parcel in this project, and on someone else's property.
- W. Permission must be obtained in advance from County DPLU, resource agencies, and any other applicable agencies, before doing vegetation management in any biologically sensitive areas or habitats or other regulated areas.
- X. Due to the current and potential future, droughts, irrigation may be required to be curtailed. The type of landscaping planted should be drought tolerant and fire resistive, and perhaps of a Zeriscape type. If irrigation is curtailed, any dead or dying vegetation must be removed, as it should be anyway.

Irrigation of Manufactured Slopes:

Any manufactured or landscaped slopes must be irrigated for fire safety.

Vegetation Management Clearing Practices and Responsible Parties:

See paragraph Q on the previous page.

11.1.6. Cumulative Impact Analysis:

Shopping centers pose the following general risks related to Fire:

- Exterior or interior trash dumpster, or compactor fire.
- Kitchen grease fire in restaurant.
- Smoking in store or warehouse even though prohibited.
- Electrical malfunction.
- Extension cords.
- Fire in storage due to careless smoking, poor housekeeping, combustibles too close to heating appliances, electrical equipment or lights.
- Overheated electrical appliances.
- Arson fire to cover up a burglary.
- Vandalism in outside storage.
- Truck fire at loading dock.
- Fire in an "M" occupancy due to spill and ignition of a flammable liquid, combustible liquid, hazardous material or aerosol.
- Spontaneous ignition of oily rags or other materials used with materials that can spontaneously heat and ignite, such as linseed oil, battery acid, spill clean up materials, etc.
- Fire in a forklift or other industrial truck.

- Spontaneous ignition of oily rags or other materials used with materials that can spontaneously heat and ignite, such as linseed oil, battery acid, spill clean up materials, etc.
- Fire in a forklift or other industrial truck.
- The most likely significant fire is in a storage area hours after a store or restaurant closes (late night or early morning).
- The most likely fire is a fire in a kitchen cooking area.
- The most likely exterior fire will be in a vehicle or a trash container.

In shopping center fires, smoke obscuration can occur in 13 minutes. Exiting must allow occupants to evacuate within this timeframe. Heat activated and manually operated smoke vents are necessary in high piled stock occupancies, to allow entry by firefighters. Remotely supervised sprinkler systems with supervised valves have proven to be the ideal solution to fire suppression in shopping centers. The system will send an alarm to a monitored location for notification of 911, sound local alarms and control the fire. Small hose utilized from fire engines may be needed for "mop up" operations. The systems must be properly designed and installed and commodity types, configurations, heights, and rack design must be such as to allow the sprinklers to control the fire.

Sprinkler systems should be able to limit the fire area in the proposed major box stores to 1,800 square feet with water damage to 6,000 square feet. The system will probably need to operate for 30 minutes.

Life Hazard:

The life loss in sprinklered occupancies is minimal based upon statistics. Additionally, there are no dwelling units in this center and no institutional occupancies with non-ambulatory patients or restrained persons.

Life safety can be adequately addressed by fire sprinklers, manual alarm systems, as required, control of finishes and flammability of contents, ample exits and exit lighting.

The primary structural life safety risk would occur during overcrowding of restaurants or the overcrowding of a retail store during a major sale.

Non Fire Related Incidents:

Medical emergencies will be the most likely emergency to occur at the center. They will most likely include sickness, heart attack, choking, slip and fall, vehicle accidents, or worker injuries. The Fire District will be able to handle these incidents in a timely manner due to the proximity of fire stations.

There is the slight possibility that a vehicle on the SR 125 could leave the freeway and end up in the shopping center, perhaps impacting a building, equipment or a vehicle.

Summary:

1. Fire sprinklers offer the optimum fire protection and are almost 100% effective in extinguishing or controlling fire.
2. Most fires in sprinklered buildings are controlled with 2 heads or less, which may flow a total of approximately 60 GPM.
3. If the system is shut off, overwhelmed, or otherwise fails, the building of origin will probably be destroyed.
4. Fire will be confined to the building of origin due to properly designed and code compliant, non-pierced, fire walls, adequate distance to unattached buildings and water for exposure protection.
5. The buildings will be properly protected with supervised sprinkler systems. The system and valves are to be electronically supervised to an approved 24/7 monitoring station. Therefore, the fire will most likely be controlled or extinguished by the system within and area of 1,800 square feet, or less, and within the rack of origin. The Fire Department may need to support the system by use of 2 or 3 hand held hose lines to extinguish fires in deep seated material, or under obstructions. This could require up to 500 GPM. Water damage should be confined to 6,000 square feet in the major stores. Actual total GPM needed for this scenario may be approximately 1,700 GPM.
6. Fires occurring in the aftermath of a major earthquake or building collapse could result in the loss of any occupancy between fire walls, if the public water system, or the sprinkler system is inoperative. With the use of earthquake shutoff valves for gas lines, a major fire is unlikely and has not occurred in previous earthquakes.
7. Arson fires should be controlled by fire sprinklers as valves will be supervised.
8. Fires beginning on exterior (for example in flammable or combustible liquids, trash fires, or truck fires) and subsequently entering a building should likely be controlled by the fire sprinklers.
9. Response will be rapid, especially during night time hours, due to the new, nearby, RFPD fire station.
10. With the installation of approved and supervised fire sprinkler systems as well as four hour rated, non-pierced fire separation walls, the available fire flow appears adequate, and any fire will likely be confined to the occupancy of origin.

This project should not contribute to any cumulative impact regarding wildland fires due to the nature of the development, lack of onsite natural vegetation after development, tilt up concrete buildings, fire rated roof assemblies and the built in fire protection.

11.1.7: Mitigation Measures and Design Considerations:

Fire Protection Objectives:

The Fire Protection objectives for this shopping center are as defined in this section.

The primary objectives are:

1. Life safety for workers and other occupants.
 2. Protection of structures from exposure fires.
 3. Confinement of a fire to building of origin.
 4. Provide built in fire protection so as to keep the fire risk commensurate with the capabilities of area fire stations.
 5. Protect the environment.
 6. Minimize damage from fire in building of origin.
 7. Minimize smoke damage from intrusion of smoke into HVAC systems.
 8. Provide adequate access and operating locations for firefighters and their apparatus.
- The project will comply with all RFPD and DPLU Fire Marshal requirements.
 - All building will have fire sprinklers.
 - Construction to comply with Basic and Enhanced ignition resistant construction per the District and County Fire Codes and Chapter 7-A; 2007 Building Code, and other applicable sections of the CBC and the CFC. Exterior walls will probably be tilt up concrete.
 - Development will comply with all other applicable NFPA standards.
 - Development will have public on site water system with mains and hydrants supplied by the Otay Water District.
 - Due to type of construction and the lack of on-site natural vegetation, occupants can shelter in place or relocate, due to the two public access roads.
 - Fuel Modification must comply with the Fire Code and this plan.

11.1.8. Conclusion

In the opinion of the author, the mitigation measures listed above should result in reducing the onsite wildland significance level to "less than significant" per the stated guidelines for wildland fires, based on the built in protection, fuel modification, response and compliance with Fire Code.

Section 111. Technical Fire Protection Report:

This Section of the Fire Protection Plan describes, in concept, the proposed Fire Protection for various components of the buildings, and also includes the roads, Fire Protection Systems, and Building construction. This Section of the plan is required by the RFPD.

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111.1: Applicable Fire Protection and Building Construction Related Codes and Standards:

- California Fire Code (currently UFC; after 1-1-08; ICC Fire Code) including Chapter 23 in the 2007 CFC for High Piled Stock.
- California Building Code (currently UBC. After 1-1-08; ICC Building Code).
- If construction permits are pulled after 1-1-08, which is probably the case, the new codes will most likely apply.
- County Building Code
- Fire District and County Fire Codes.
- National Fire Protection Association (NFPA) standards as may be applicable:

- a. NFPA 10; Fire extinguishers

- b. NFPA 13; Fire sprinkler systems
- c. NFPA 14; Standpipes
- d. NFPA 20; Fire Pumps; if needed (doubtful if needed due to high water system pressures)
- e. NFPA 70; National Electrical Code.
- f. NFPA 72; Fire Alarms
- g. NFPA 90; Air Conditioning and Ventilation Systems
- h. NFPA 110; Emergency and Standby Power Systems
- i. NFPA 505 and 58; and 2007 CFC Sec 309; Powered Industrial trucks (forklifts)

The RFPD Fire Chief has stated that the 2007 CFC and CBC, the District Fire Code and County Fire and Building Codes shall be followed. Due to the transition to new Fire and Building Codes in California on 1-1-08, those Codes are referenced in this Section and need to be followed.

111.2: Fire Protection Water System, Mains, Hydrants, Fire Sprinklers, Fire Extinguishers:

The onsite Fire Protection Systems will comply with the Fire District requirements, Fire District Fire Code and County Fire Code. The following is proposed:

111.2.1: Fire Flow:

- Fire flow is required by the District Fire Code to be 4,000 GPM for 4 hours (subject to final determination of construction type by architect) or the demand of the largest fire suppression system plus 500 GPM, whichever is greater. The Fire Code requires a minimum of 2500 GPM for commercial developments and developments in the WUI areas. County Fire Code requires 2500 GPM in mains in a high wildland fire hazard area (Code states "for subdivisions".) Appendix 111-A of the Fire Code requires up to 8000 GPM for 4 hours for the size of the buildings. With a 50% credit for sprinklers, the required flow is 4000 GPM for 4 hours at 20 PSI (subject to final determination of construction type by architect). There shall be an FDC with two 4" threaded RFPD pumper inlets, on the development side of each double backflow detection device at the beginning of the onsite loop. This will allow the entire on site loop to be charged, if needed, by fire engines. Potential manufacturer is Potter Roemer Company in Cerritos Calif. Double back flow devices shall be UL listed or FM approved for fire service and shall be OS and Y indicating valves. Such OS and Y's shall be remotely supervised to a 24/7 approved alarm company.

111.2.2: Fire Sprinklers:

- All structures to have internal Fire Sprinkler systems. The estimated sprinkler demand for the Target store may be about 2250 GPM including hose allotment at about 52 PSI at base of riser. Actual design and calculations are the responsibility of the sprinkler contractor. Sprinkler risers shall be in a 1-hour rated room directly accessible from exterior, with a KNOX key box adjacent to the door. Exterior of the door to have a sign stating "Sprinkler riser room". All valves shall be remotely supervised to an approved

24/7 alarm company. Visible and Audible flow alarms shall be on interior of buildings and on the exterior on the front of building and on the public road sides. Signs to be under alarms "If alarm sounds; call 911", in bilingual wording. In addition, there shall be an indicating light that is activated upon flow of a riser. This light shall be on outside of building in the area where risers are, and on the risers, to indicate to the Firefighters which riser is flowing. The Riser designation shall be on a reflective sign under the light.

- Each Building is to have a Fire Department Connection (FDC). The Fire department connections shall be on the front, address side of buildings at least 40' from the building. There shall be a fire hydrant within 50' of the FDC. FDC's must be labeled as to system served and have theft proof caps. There shall be an FDC with 2.5-inch inlets for each building. FDC's shall be located on site in the development so that Fire engines are not connected to FDC's on the public streets, due to traffic. Systems that require 2,000 GPM fire flow shall have a four 2.5 inch inlet FDC. FDC's shall be located on raised islands in a location where vehicles cannot back into it or park in front of it. Approved crash posts, complying with 2007 CFC Section 312, shall be installed. Red reflective markers shall be installed in pavement on fire lane in front of the FDC location. Any curbing in front of FDC to be painted red and have the words: "No Parking- Fire Lane" in bi lingual wording. FDC's shall not be obstructed by any vegetation and trees, and shall be have a clear area around FDC of 3 feet or more.
- The following table, provided by the consultant, lists generic fire sprinkler demands for various types of occupancies.

ESTIMATED FIRE SPRINKLER DEMANDS BASED ON OCCUPANCY/USE (GENERIC EXAMPLES)

OCCUPANCY/USE	DENSITY (gpm/sf)	Area of Application (sf)	Sprinkler Demand (gpm) (with imbalance)	Hose Demand (gpm)	Total Demand (gpm)
Spec Warehouse (< 25' ht)	0.45	3000	1485	500	1985
Spec Warehouse (> 25' ht)	0.60	3000	1980	500	2480
Spec Warehouse (w/ EFSR)	ESFR	Special Application Sprinklers Flowing 12-13 heads	1750 ¹	250	2000
High Piled Group A Plastics	ESFR	Special Application Sprinklers Flowing 12-13 heads	1750 ¹	500	2250
High Piled Flammable Liquids (25' high)	0.60	3000+ in rack sprinklers	2530	1000	3530
Hazardous Materials (H room)	0.60	3000+ in rack sprinklers	2530	1000	3530
Flammable Liquids Spraying	0.40	2500 (ex. haz. gr. 2)	1200	500	1700
Rubber Tire Storage (20' high) ²	0.40	3000+ 1 level in-racks	1585	500	2085
Rubber Tire Storage (20' high) ³	0.60	3000	1980	500	2480
Big Box (Home Depot, etc.)	ESFR	Special Application Sprinklers Flowing 12-13	1750 ¹	250	2000
Recycling facility (parts, etc.)	0.20 ⁴	1500	360	250	610
Manufacturing (low hazard)	0.20	1500	360	250	610
Manufacturing (high hazard)	0.40	2500	1100	500	1600
Research and Development	0.20	1500	360	250	610
Indoor Storage and Hazardous Materials Storage	0.17 ⁵	3000	610	250	860

¹ Fire Pump typically required to meet flow and pressure demands
² Fixed racks, on pallets, on-side or on-tread (10' Max. clearance between sprinkler deflector and max-storage ht.)
³ Fixed racks, w/o pallets, on-side or on-tread (10' Max. clearance between sprinkler deflector and max-storage ht.)
⁴ Higher densities required if high piled storage included
⁵ Minimum flow rate (Ordinary Group 2) over minimum 3000 sf operating area per CFC Article 80, Section 8003.1.6. Higher densities and hose demand may be required based on commodity and storage height.

111.2. 3: Wet Standpipes:

- Any building with high piled stock should have automatic wet standpipes with 1.5-inch thread attached to Fire Sprinkler system, in the high piled stock areas. Flow to be at least 100 GPM, and with the ability to boost pressure from the FDC. Fire hose will be provided by the Firefighters.
- In addition, all major buildings (Target, and Major stores A,B and C) should have automatic wet standpipes plumbed off sprinkler system to aid firefighters in firefighting, due to the size of the buildings. These connections shall be 2.5 inches with a reducer to 1.5 inches, and a cap with security provisions. Actual locations to be shown on fire sprinkler drawings. In concept, they should be on perimeter of the interior and located so that all portions of the interior of the building can be reached with 100' of fire hose and a 30' water stream. Standpipe installations to comply with NFPA 14, NFPA 13, and Section 905 of the 2007 CFC.

111.2.4: Fire Water Mains

Underground Firewater mains must be a looped system and shall comply with Otay Water District requirements and shall be a part of their system. Minimum lateral size to hydrants to be 6" ID. Estimated loop size is 12" ID subject to detailed design and calcs. Loop shall provide needed fire flow around either direction to most remote location, if a valve is shut off and the most direct path of water flow to most remote location is out of service.

- Standard, RFPD approved, commercial wet barrel Fire hydrants with two 4" outlets and one 2.5" outlet are required. They shall comply with the Otay Water District specifications for a commercial/industrial hydrant. Hydrants to be spaced 350' apart on the onsite Fire lane roads around all buildings and on the public access roads serving the property. Hydrants to be 40' from structures to be protected. Isolation valves on laterals to be 10 to 25 feet in front of hydrant.
- Hydrants shall have approved crash posts, complying with 2007 CFC Section 312, due to the amount of traffic, and also the backing of delivery trucks.
- Hydrants shall flow 1,000 GPM at 20 PSI. During a single fire hydrant test. Valves in the firewater system loop, including those on lines serving fire protection systems, to be supervised indicating (PIV) valves, except valves on laterals to hydrants.
- Hydrants shall be located in an island or protected area not obstructed by parking. Red reflective markers shall be installed in fire lane in front of hydrant. Curbing at fire hydrant to be painted red and marked "No Parking- Fire Lane" in bi lingual wording.
- Hydrants and FDC's shall be clear for 3' around them and have a concrete base (gravel if dry barrel hydrant) to prevent weeds. There shall be no trees over fire hydrants or FDC's, or vegetation around them.
- Firewater system valves, any fire pumps and fire protection systems shall be supervised locally and to an offsite approve 24/7 alarm monitoring station.

111.3. Site Access and Onsite Fire Access Roads:

There will be two access roads serving the development. They are Harvest Road; 80' wide, and Otay Mesa road; at least 100' wide. There will be one traffic light along Harvest Road for the entrance at Driveway A and one traffic light at Harvest and Otay Mesa Road. Traffic lights are required, by the RFPD, to have traffic pre-emption devices (Opticom). In addition, there will be onsite roads serving the parking lot, which will have a minimum 24' width. All buildings shall have a fire Lane that leads from the public entrances to each building. The width of those roads is required to be a minimum of 24' per the County Fire Code and District Fire Code. In addition, 26' wide Fire Lane roads shall be provided at each building. Fire Lane access roads are required by Fire Code to reach to within 150' driving distance of any portion of the building. However, it is recommended that 28 feet wide Fire lane roads are needed for the Target and the Major A, B and C buildings, due to their size and height, and they should encircle the buildings to allow for Aerial ladder truck operations. Such roads should be a minimum of 15' from building wall and a maximum of 30'. The road is to be positioned parallel to at least one exterior side of building (2007 CBC Appendix D). Building Pads A and B and Shops 2 and 3 should have 26 feet wide fire lanes to within 150' of all portions of the exterior wall.

The actual final road layout, turnarounds and turning radiuses to be to RFPD and DPW approval. Roads will be AC paved and shall support a 75,000-pound fire truck. Road grades are less than 4.5%. Vertical clearance of fire lanes around the buildings will be clear to the sky with no power lines or vegetation, etc, over fire lanes. All fire lanes shall have curbs painted red and indicate "No Parking- Fire lane" in bi lingual wording. In addition, signs shall be posted along fire lanes indicating "No Parking- Fire Lane" in bilingual language and also referencing the Code which is violated and that vehicles will be towed. The management shall assure that fire lanes are kept open and that vehicles are towed if needed.

Public streets to have street signs at intersections to approval of the RFPD and County DPW.

Roads to meet County Road standards and to be paved.

111.4. Structural Protection:

There will be ten permanent one-story buildings; all of which are retail sales or restaurants. Maximum height is 35 to 36'. The largest building structure will be concrete masonry or concrete tilt up type "unlimited building" which is of non fire rated construction, one story, 190,500 square feet in size. It will have a 64,028 square foot building adjoining, with a 4 hour rated non-pierced fire wall between them. Other size buildings range from 5,000 square feet up to 30,000 square feet. Four of these are free standing with separation of at least 40' between them, and there are four which will be attached but separated by 4 hour rated non pierced fire walls. Any shops within a building should be separated floor to underside of roof with a rated fire wall to help prevent spread from store to store via walls or attic. Common attics should be eliminated. Occupancy types are "M" for stores and "B" for restaurants with occupant load under 50. If 50 or more, they are A-2. Any theatres or other public assemblies will be "A" occupancies, depending on occupant load. Buildings will be designed to comply with the County Fire Code requirements in Division 11, Appendix 11-A, Section 26; for both basic and enhanced construction, as applicable to the types of commercial buildings and construction, and will comply with the new WUI requirements in Chapter 7-A and other applicable sections of the 2007 California Building and Fire Codes. The intent is that the exteriors will be ignition resistant or approved non-combustible as required by the Fire and Building Code WUI requirements. Actual types of construction have not been determined as yet by the Architect. Per the Architect, building setbacks may be as much as 60' from property line. The buildings will be fully sprinklered. All of the major stores may have storage over 12' high; this is classified by the Fire Code as High Piled Stock.

The exterior construction will be as follows:

- Walls: Approved Ignition resistant block, masonry, or concrete. Smaller buildings may have stucco exteriors meeting Fire and Building Code requirements for ignition resistant or approved non-combustible construction. There will be no wood siding or shake shingles. Decorative heavy timber is acceptable. The exterior walls facing all sides of the property must be ignition resistant construction.
- Roof: Roofs will be a listed Class A roof assembly installed per the listing and manufacturer's instructions. Where the roof profile allows a space between the roof

covering and roof decking, including on edges, the spaces shall be constructed to prevent the intrusion of flames and embers, and be fire stopped with approved materials. When provided, valley flashings shall not be less than 0.019 inch (No. 26 galvanized sheet gage) corrosion resistant metal installed over a minimum 36" wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley. See Chapter 7-A; 2007 CBC for details. DPLU Fire Marshal may allow a class B roof assembly if a Class A flat roof assembly is not available. A request for "Alternative Method" would need to be submitted by Architect.

- Any ends of tile roofs, such as Spanish tile, shall have bird stops in the ends to prevent intrusion of debris or bird nests.
- There will be no eaves.
- Glazing will be tempered glass or double pane glass with one tempered panel.
- Any skylights shall be tempered glass or class A rated assembly. An exception is the UL listed smoke vents for high piled stock. However, that glazing should be tempered glass if feasible.
- Vents shall be properly designed and screened with ¼" mesh screening per the County Fire Code and shall be designed to prevent intrusion of airborne burning debris into the ventilated area. No vents in soffits, rakes, cornices, or any overhanging areas. Any vents in exterior walls shall be designed to prevent the intrusion of airborne burning debris and be screened with ¼" mesh screening. Vents should not face wildland areas to the north, east, or the SR 125 to the west. Any HVAC or other ventilation system shall be designed so that it can be easily shut down by firefighters in the event of a wildland fire, or a fire or hazardous materials release on the SR-125, to prevent intrusion of smoke or vapors.
- Any gutters or downspouts shall be of non-combustible construction and shall be designed with the means to prevent build up of debris, which can ignite roof edges.
- There shall be no combustible insulation in any attic or ventilated space.
- Any decks, deck surfaces, porches, or patio covers shall comply with the County Fire Code requirements for Fire Resistive Construction in the WUI areas (Section 26), and Chapter 7-A of the Building Code, and be approved non-combustible, one hour fire resistive, or heavy timber.
- Exterior doors shall be approved non-combustible construction or solid core wood not less than 1 ¾" thick or have a fire rating of 20 minutes.
- The buildings will have exits in compliance with the 2007 CBC and County Building Code.
- Any property line fences should not be wood.
- There will be a fire wall between the Target store and adjoining Major C store and also between Major A and B and Sub Major and shops. The fire walls between any buildings should be four-hour non-pierced fire walls with parapets to assist the Firefighters in containing a fire to the building of origin. Any stores within buildings should have rated fire walls from floor to underside of roof to help prevent fire spread. Common attics should be eliminated, in order to prevent spread to adjoining stores through an attic.
- There should be a rated fire wall and rated doors between any storage area and retail area in a store.
- There shall be an exterior door leading directly to electrical panels to allow Firefighter access. Exterior door shall have sign that states "Electrical Panel inside". There shall be a KNOX key box on exterior at that location.

- There should be a rated separation wall and rated doors between retail areas and storage areas in a store.
- Any awnings, canopies, trellises, etc on buildings shall be approved non-combustible, designed not to collapse on firefighters, and overhangs shall be sprinklered when required by NFPA 13.
- Buildings shall have locations on each side to allow the raising of ground or aerial ladders by Firefighters. These areas need to be clear from the wall out to the access fire lane around the building. This is usually about 9' for a 35' ladder. An aerial ladder truck may need to be about 18' away from the building wall, but no more than 30', to provide a ladder climbing angle of about 52 degrees. Details to be provided to the RFPD on a separate dwg prior to construction. Any side screening walls at top of the building wall shall have a firefighter access door on each side of the building. Such access doors shall have reflective lettering on them indicating "Firefighter access", and must not result in a drop of more than 3' from a Fire Department ladder on to the roof.
- Smoke vents, or an approved smoke removal system, are needed in all buildings with high piled stock areas.
- Gas valves should have approved earthquake shut off devices.
- Building address numbers/letters to be 6" high with ½ stroke per RFPD Fire Code. Addresses shall be on front of building and also on the sides facing the public roads. Numbers/letters to be plainly visible and legible and be reflective.

111.5. Protection for Forklifts and Battery Charging Areas:

Forklifts and other powered industrial trucks for movement of stock in buildings, and large floor scrubbers, buffers, etc., shall comply with Section 309 of the 2007 CFC and NFPA 505 and 58, and be approved for the use. Forklifts, etc, shall be refueled outside of any building. Refueling areas shall comply with the CFC. Battery charging and storage areas shall have adequate ventilation to avoid any accumulation of Hydrogen gas and shall have spill control for the batteries. Battery systems with over 50 gallons capacity shall also comply with 2007 CFC, Section 608. Battery chargers shall be of an approved type and have 3' clearance from combustibles. The charging area shall have a 4-A, 20-BC Fire Extinguisher within 20'.

111.6. Protection for Trash Chutes into Buildings, and for Dumpsters:

Any trash chutes that enter into the building through an opening in the exterior shall have a rated self-closing fire door on the opening and shall have a sprinkler head over the opening. Any trash dumpsters to be at least 5' from a building or have sprinkler protection. Large trash dumpsters shall also have a 2.5" Fire Department connection on them.

111.7. HVAC Systems:

HVAC systems in Target, and the Major store, should have the capability for Firefighters to shut them down in the event of smoke from an external offsite vegetation fire or a fire or hazardous materials event in the area. They shall also have the capacity to manually activate an exhaust

feature to remove smoke from a building. The operations panel shall be accessible to Firefighters directly from an exterior door. Door to have sign on exterior; "HVAC controls inside". There should be a KNOX key box adjoining the door. Duct Smoke detectors may be required in certain size ducting to shut down HVAC systems.

111.8. High Piled Stock Requirements:

The high piled stock requirements of the 2007 CFC will be followed. They are found in Chapter 23. Aerosols are covered in Chapter 28. Listed smoke vents or an approved smoke removal system will be needed, To comply with the County Fire Code and to assist in firefighting operations in such buildings. Wet standpipe hose outlets should be provided on the sprinkler system in order to assist firefighting operations. Sprinkler systems shall be designed for proper protection of the specified commodity. Exterior Firefighter access doors will be provided every 100' around the high piled stock areas. All rack systems to be approved by Building Official and shall meet seismic requirements. Smoke vents shall be openable from roof and from floor of store. Vent glazing should be tempered glass if feasible, in order to help prevent breakage of glazing from airborne flying debris from an offsite vegetation fire. Aisleway requirements of Chapter 23 shall also be followed. Separate permits for High Piled Stock shall be obtained from the RFPD. Detailed plans for High Piled Stock shall be submitted for review and approval prior to occupancy.

111.9: Hazardous Materials

Quantities of any hazardous materials or flammable or combustible liquids must stay below exempt Quantities for retail, "M", occupancies per applicable requirements of the Fire Code. Spill control and secondary containment will be provided if and where required. NFPA hazards signals will be provided on exterior of building and over the entrance to the storage area where the materials are, when required.

111.10: Fire Detection and Alarms, Water Flow Alarms, and Monitoring:

The Building Fire Sprinkler systems, including all valves, and alarm systems will be supervised locally and remotely to an approved monitoring company.

Sprinklers shall have audible/visible alarms on exterior of buildings and interiors. There shall be a sign on exterior of building at the device which states, in bi lingual language;" when alarm is activated; call 911"

The main Fire Alarm Control panel, and zoned graphic annunciators for alarm and sprinkler systems (which need to be provided in the major stores) shall be located inside the main entrance to the buildings. KNOX key box shall be provided on exterior of main entrance.

Detailed plans and specifications for the monitoring and alarm systems will be submitted for review of the Fire agencies, when complete.

All detection and fire alarm systems, where required by Section 907 of the 2007 CFC, will comply with NFPA 72 and 2007 CFC Section 907. A Manual fire alarm pull station is to be located at the main annunciator panel per NFPA 72 Sec. 6.8.5.1.2.

Major stores need to have Public address systems on emergency power and bullhorns or other suitable means of making emergency announcements even if power is off. Employees making announcements will need a bi lingual script to read.

M occupancy stores with an occupant load over 500 persons are required to have audible visible fire alarms throughout the building, which are activated by sprinkler system flow (2007 CFC sec. 907.2.7).

111.11: Exits, Exit lighting and Emergency/standby Power:

Means of egress, including aisles, shall comply with Section 10 of the 2007 CFC and the Building Code. Emergency lighting and Emergency/standby power systems will be provided for the major buildings where required by the Building Code, and as required by Section 604 and Section 10 of the 2007 CFC, and in compliance with applicable portions of NFPA 110. However, due to its size, the Target store and the Major C store must have an emergency generator for life safety purposes. The generator should be supplied by diesel, and the generator and diesel tank should be outside of the building and not on the roof. Any emergency generators and their fuel supply must be in a safe location, and not exposed to wildland fire hazards, or vehicular traffic or trash dumpsters. Generator to be powered by diesel, and meet the appropriate NFPA standard and CFC requirements, and shall not be on a roof. Generator systems must have regular load tests to assure readiness.

Exits and exit-ways shall have bi lingual exit signage and emergency lighting as/where required by Chapter 10 the Building Code. Exit doors shall have signs on interior and exterior sides: "Exit door; do not obstruct" in bilingual words. There must be no delayed egress locks on doors. The occupant load of the Target store, per the 2007 CBC Table 1004.1.1, is 6,350 persons. It is doubtful that this occupant load would actually occur.

111.12; Portable Fire Extinguishers:

Portable Fire Extinguishers are required per 2007 CFC Section 906 and shall be sized an installed per NFPA 10.

Fire extinguishers will be provided in all occupancies, in compliance with the CFC and NFPA 10. Extinguishers will be in cabinets with glass fronts, to discourage theft.

In general, fire extinguishers will be placed and properly mounted 3.5' to 5' above floor, depending on weight, and should provide a maximum travel distance of 75' apart in main store aisle ways and paths of travel. Actual locations, coverage and ratings to comply with Chapter 906 of the 2007 CFC.

Additional extinguishers will also be located in storage areas, employee lounges, mechanical equipment rooms, kitchens, and at battery charging areas for industrial trucks. Class "K" extinguishers will be provided in cooking areas where required by CFC Section 906.

Fire extinguishers will be multipurpose, a dry chemical type with an ABC rating; providing a minimum 2-A, 20 BC rating.

Extinguishers will be serviced and tagged annually by a State licensed service company. Carbon dioxide extinguishers may be utilized in lieu of dry chemical for electrical hazards.

Locations of extinguishers will be well marked with bi lingual signage at an elevated location in sales areas for visibility.

111.13: Combustible Decorations, Displays, and Combustible Storage:

Combustible decorations and interior displays shall comply with 2007 CFC Section 314 and Chapter 8. Any combustible decorations or displays must be approved fire retardant and must not intrude on exit ways or obstruct fire protection equipment, extinguishers, etc. Decorations or stock must not be hung from sprinkler heads.

Combustible storage not on displays in a store should be stored in a separate, room with 1 hour rated walls and self closing rated doors. Storage must be kept neatly piled and must not block aisles, exits, exterior cargo doors or fire protection equipment, extinguishers, etc. Any high piled storage must comply with the Fire Code High Piled stock requirements.

There must not be an accumulation of trash, boxes, etc in aisles, back rooms or around buildings, including under overhangs.

Trash to be removed from buildings daily at end of work day, and boxes, trash, etc., shall not be stored in any exit ways or aisles.

Interior finishes of buildings will comply with the requirements of the Building Code as to flame spread classes and ratings. In addition, CFC Section 314 and Chapter 8 will be complied with as to decorative materials.

Drapes, curtains, screens, and other combustible, decorative material, will be flame resistant and bear a label certificate from the State Fire Marshal. Refer to NFPA standard 701 "Standard Methods of Fire Tests for Flame Resistant Textiles and Films".

Fire loading will be controlled by the parameters and limits established in the Fire Code. Loading is inherently limited by size of building, rack design, rack height, storage height limitations, aisle widths, exit ways and type of commodity.

The commodity classification utilized for the Target store, the largest occupancy, will probably be Class IV, which is similar to Home Depots and Coscos. Actual determination is the responsibility of the sprinkler system designers in accordance with the 2007 CBC. Estimated,

conceptual, demand for the sprinkler system may be .60 GPM sq ft over 2000 square feet plus hose allowance. Actual system design and installation is the responsibility of the sprinkler contractor.

The amount of flammable and combustible liquids and hazardous materials are limited by the Fire Code for non-H occupancies. CFC Chapter 28 regulates aerosols. Relatively high amount of plastics can result in a commodity classification of Plastics Group "A" per CFC Chapter 23.

The stores are classified as "M" occupancies (mercantile) in the 2007 CBC. The Fire Code establishes limits for the flammable liquids, combustible liquids, Hazardous Materials, and aerosols in the M occupancies.

Sprinkler designers shall submit written justification to Fire District for the selected commodity class.

The objective in controlling fire loading is to not receive an "H" occupancy classification, and to stay within the capabilities of the sprinkler system.

There will be no tire storage or tire sales.

Trash and empty boxes, packing materials, etc., will be removed from buildings daily.

Stock will not be left in aisles of stores. It will be kept in storage areas until ready for placement on racks or displays. Aisle widths in high piled stock areas shall be maintained per Chapter 23 of the 2007 CFC. Aisle ways throughout stores will not be blocked and a minimum of 44" clearance will be maintained, including during stocking. Merchandise will be kept on one side of the aisle.

No storage will exceed allowable limits based on the design of the sprinkler system. Any flammable and combustible liquid storage should be stored at levels of 5' or less (as close to floor as possible). Any aerosols should be stored on fixed shelving no higher than 8' and comply with the applicable requirements in 2007 CFC Chapter 28. They will be stored away from highly combustible materials, and will be at least 50' from exits.

A floor plan showing aisle ways and exit paths to be maintained will be posted in all stores.

Storage will not be placed within 18 inches of ceiling sprinklers and 36 inches of ceilings or roofs.

111.14: Hood Systems:

Any cooking areas where there are grease laden vapors shall have an approved fire extinguishing system as required in 2007 CFC Section 904.11. This shall be a UL 300 wet chemical system, Co2 system, fire sprinklers or other approved system. Class K portable extinguishers shall also be provided per Section 904.11.5.2.CFC.

111.15: No Smoking Signs:

As there will be customers from Mexico or other states, bilingual "No Smoking" signs must be posted in all buildings.

111.16: Site Security and KNOX Boxes:

It is recommended that, if it is found after operation that security is a problem, there be a 24/7 on site guard service that is equipped and trained to call 911 in an emergency. Cell phones shall be tested to verify where the 911 call is received due to proximity to border.

The site may be fenced with a security fence.

Any security gates shall be at least 24' wide and comply with the RFPD requirements and the requirements of the DPLU Fire Marshal for Level 2 industrial gates.

Any gates on access roads shall have the following features:

- Battery backup for primary power failure.
- KNOX brand key switches that override all functions and open the gate.
- Minimum vertical clearance to be 13'6".
- Gates shall be of a sliding type.
- Gate to be non-combustible.
- Gates to be posted "No Parking- Fire Lane" with bi-lingual signage, which also cites the appropriate California Vehicle Code Section.
- Gate to have 50' long, flat, portion of road before the gate to facilitate stopping and parking of a fire truck.
- Traffic trip loop on development side of gate.
- Detailed plans to be submitted to RFPD Fire Chief and DPLU Fire Marshal.

Each building shall have a KNOX key box at main entrance, and at each door to a sprinkler riser room. Each Major building to also have a Knox data box which includes a floor plan showing exits, sprinkler risers, alarm panels, HVAC control panels, electrical panels, emergency generator controls, gas shutoffs and any roof access ladders/stairs.

111.17: Emergency Plan and Equipment:

There will be an all risk Emergency Plan prepared for each store and for the center in compliance with the CFC, and submitted to the RFPD and DPLU Fire Marshal for review and approval prior to occupancy. There shall be a designated person in each building, to call 911, make appropriate bi lingual announcements, and take charge of an emergency until arrival of emergency responders. As a part of this program, there will also be suitable first aid equipment on site and an AED. Personnel will be trained in the use of the AED. There should be at least one employee on duty, or security person, trained to the level of EMT-D.

The optimum method to respond to emergencies at this center is to provide simple checklists for use by facility managers and personnel. Checklists should be conspicuously posted in work and employee areas. They should provide response guidelines, which may have the following objectives:

- Life safety of occupants.
- Prevent or minimize injuries.
- Call 9-1-1 (except earthquake unless other emergencies occur).
- Evacuate to safe location or shelter-in-place.
- Administer first aid if trained to do so and if safe to do so.
- Extinguish incipient fire if safe to do so.
- Protect occupants and evacuees from falling stock, debris or structural materials
- During an earthquake.
- Assure sprinkler system valves are on.
- Shut off gas supply after earthquake (if safe to do so).
- Close fire doors where needed.
- Protect business records (if safe to do so).

Emergency plans will also contain information as to operation of emergency generators where installed and emergency lighting where applicable. In addition, instructions will be provided on how to shut down the air inlets to the building, in the event of an exterior fire or other incident, which may allow smoke or vapor to enter the building. For example, a vegetation or trash fire. Stores should provide written proof of initial and annual training of employees on emergency procedures, to Fire District.

111.18: Fire Prevention Program:

Proper construction, as well as state of the art systems and safeguards will be utilized in all buildings, to assure reasonable fire safety. However, it will be extremely important to implement an ongoing fire prevention program at the center. This program will involve the following components:

- Regular inspections of the center and assure exterior trash areas and other exterior
- Hazards are controlled.
- Annual fire safety inspections commissioned by the management of the center to assure the following:
 - Ongoing maintenance of exits, exit ways, exit lighting, and aisle ways.
 - Proper separation, quantities and stacking of commodities.
 - Limit over stocking of sales areas.
 - Clearance of stock below ceilings and sprinklers.
 - Elimination of extension cords, substandard wiring and overloaded circuits.
 - Removal of trash from buildings.
 - Proper and safe maintenance operations.

- Removal of paint rags and oily rags and flammable or combustible cleaning fluid from buildings.
 - Eliminate flammable decorations, etc.
 - Proper position of sprinkler system valves.
 - Clearance around electrical panels.
 - Integrity of fire separations and doors.
 - Obstruction of fire doors.
 - Cleanliness of warehouse and storage areas.
 - Cleanliness of kitchen cooking equipment and filters.
- Annual inspection and maintenance of fire extinguishers, fire suppression systems, associated valves and connection, and alarm systems.
 - Regular inspection and test of emergency generators.
 - Prohibition of smoking in building, except in designated areas.

111.19: Construction Fire Safety, Access, Water Supply, and Temporary Buildings:

A Construction Fire Safety Plan will be prepared and submitted to the RFPD and the DPLU Fire Marshal prior to the introduction of any combustible materials onsite. This plan shall address fire truck access to the site and location and access to the construction trailers, fire protection for any trailers, onsite water supply, fuel modification zones, location of hazardous materials and flammable or combustible liquids, dispensing of any fuels, welding, grinding, means to call 911, fire extinguishers, first aid and AED equipment, on duty safety person/EMT, safe smoking areas, and other applicable safety issues.

IV. Summary:

This Conceptual Fire Protection Plan/Technical Report responds to the requirements of the Rural Fire Protection District and the County Department of Planning and Land Use. This plan also complies with the requirements of Article 86 of the Fire Code, which requires a Fire Protection Plan for all new development in the Urban Wildland Interface. It also includes the recommendations of the consultant based upon the potential risks and the necessary mitigations.

Engineering, architecture, landscape architecture, building design and construction, sprinkler and water system design are out of the scope of this plan and are the responsibility of others.

Actual detailed on site road and fire water system plans shall be submitted to the RFPD Fire Chief at time of final design. Construction plans, and fire sprinkler system plans, for each building shall also be submitted to the RFPD, at time of actual construction, to demonstrate implementation of the concepts in this plan and compliance with all applicable Codes and ordinances.

Detailed landscape plans shall be submitted to RFPD Fire Chief and the DPLU and shall demonstrate compliance with this plan.

As fire can be unpredictable and dynamic, this plan cannot guarantee that a fire or other emergency incident will not occur or will not cause damage to property or injury or death to occupants and workers. There are no guarantees made, expressed or implied, regarding the adequacy or effectiveness of any recommendations or requirements in this plan for all fire and emergency situations. However, the Fire Protection concepts proposed in this plan should result in a well-protected development and lessen the impact on the Fire District.

The owner, developer, engineer, architect, landscape architect, contractor, and sprinkler and water system designer, may submit requests to the RFPD and the County DPLU for review and approval of Alternative Materials and Methods which have the same practical effect and equivalency as the materials and methods required or recommended in this plan.

V. List of Preparers:

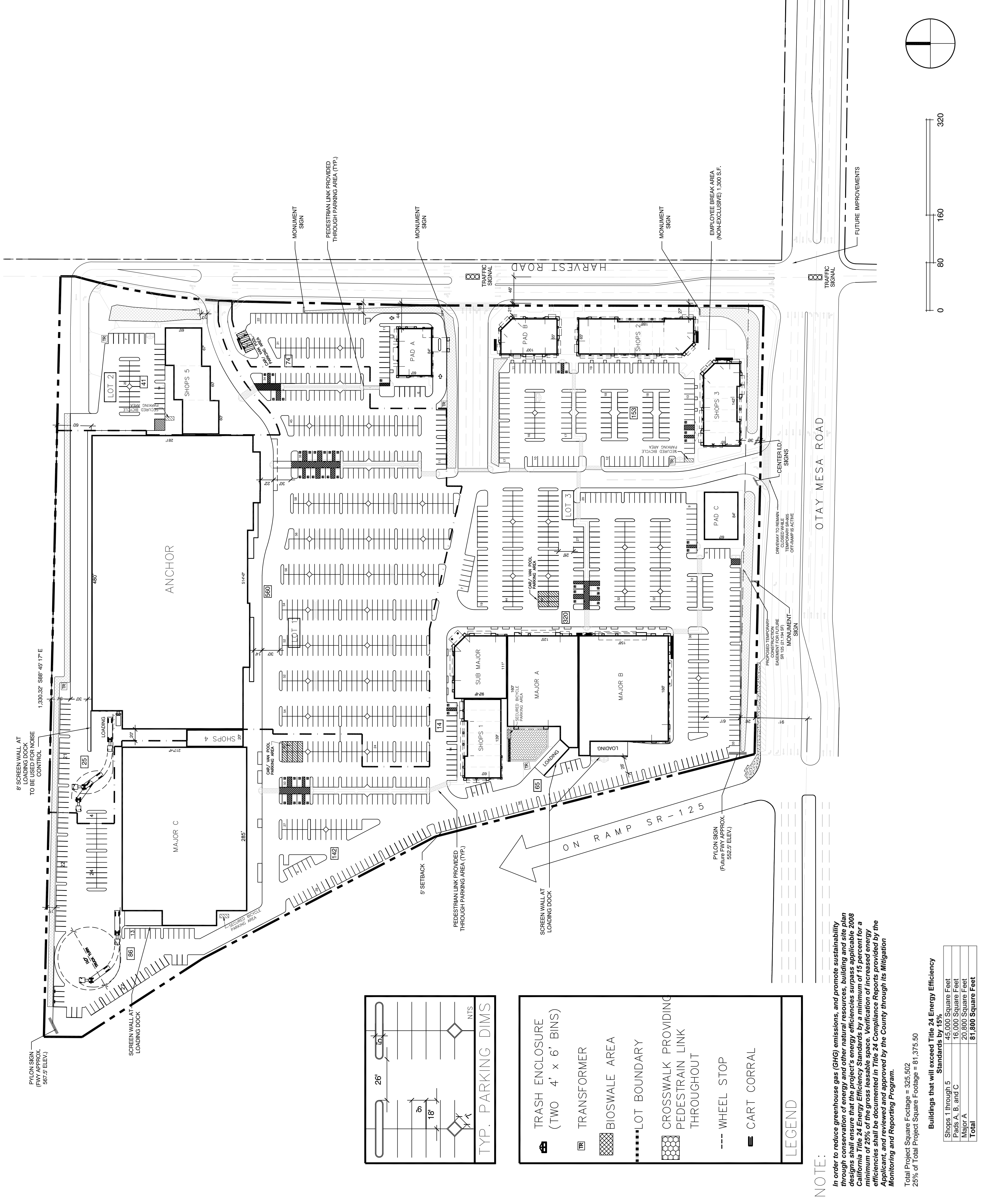
This plan was prepared by James W Hunt; Hunt Research Corporation.

James W Hunt

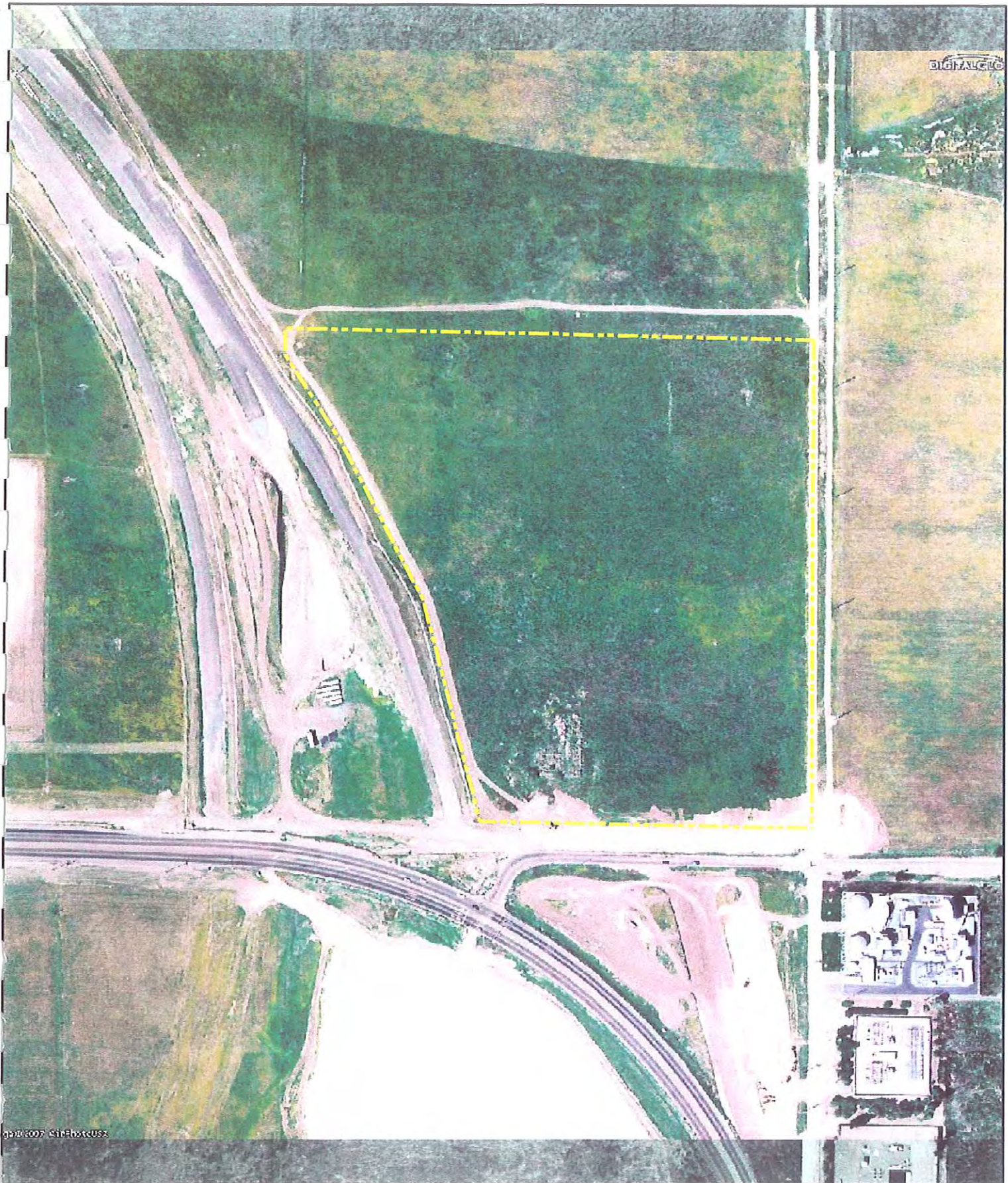
TECHNICAL APPENDICES

- Site Plan
- Aerial Photo
- Ground Level Photos.
- BEHAVE Fire Spread Models.
- Form DPLU #399F; Project Availability Form for Fire Protection.

SITE PLAN



SITE AREA: ±9.10Ac (±396,396 S.F.)				
SITE COVERAGE: 34.2%				
USE	SQUARE FOOTAGE	PARKING RATE	REQUIRED PARKING (# STALLS)	PROPOSED PARKING (# STALLS)
ANCHOR STORE	140,084 SF	1/250 SF	560	560**
LOT PARKING RATIO = ± 4.00/1,000 SF ACCESSIBLE PARKING SPACES PROVIDED = 16 (INCL. 5 VAN) BICYCLE PARKING PROVIDED = 15 SPACES **DOES NOT INCLUDE 16 STALLS SHOWN WITH CART CORRALS				
LOT 1 SITE SUMMARY				
SITE AREA: ±1.82 Ac (±79,279 S.F.)				
SITE COVERAGE: ±15.14%				
USE	SQUARE FOOTAGE	PARKING RATE	REQUIRED PARKING (# STALLS)	PROPOSED PARKING (# STALLS)
SHOPS 5	12,000 SF	1/250 SF	48	41
TOTAL	12,000 SF	1/250 SF	48	41
LOT PARKING RATIO = ± 3.42/1,000 SF ACCESSIBLE PARKING SPACES PROVIDED = 0 BICYCLE PARKING PROVIDED = 20 SPACES				
LOT 2 SITE SUMMARY				
SITE AREA: ±17.52Ac (±763,171 S.F.)				
SITE COVERAGE: ±23.00%				
USE	SQUARE FOOTAGE	PARKING RATE	REQUIRED PARKING (# STALLS)	PROPOSED PARKING (# STALLS)
MAJORS A & B	50,390 SF			
MAJOR C	64,028 SF			
SUB-MAJOR	10,000 SF			
SHOPS 1,2,3,& 4	33,000 SF			
PADS A,B,& C	16,000 SF			
TOTAL	173,418 SF	1/250 SF	694	852
LOT PARKING RATIO = ± 4.96/1,000 SF ACCESSIBLE SPACES PROVIDED = 24 (INCL. 6 VAN) BICYCLE PARKING PROVIDED = 96 SPACES				
LOT 3 SITE SUMMARY				
TOTAL SITE AREA: ±28.79Ac (±1,254,092 S.F.)				
TOTAL SITE COVERAGE: ±26.13%				
APN: 646-240-48				
USE	SQUARE FOOTAGE	PARKING RATE	REQUIRED PARKING (# STALLS)	PROPOSED PARKING (# STALLS)
TOTAL	325,502 SF	1/250 SF *	1302	1453**
OVERALL PARKING RATIO = ± 4.44/1,000 SF ACCESSIBLE PARKING SPACES PROVIDED = 40 (INCL. 11 VAN) BICYCLE PARKING PROVIDED = 131 SPACES (1/10 REQ'D PARKING STALLS) * GLA DEVOTED TO EATING/DRINKING ESTABLISHMENTS IS LESS THAN 10% OF GLA AS REQUIRED BY PARKING RATIO ** DOES NOT INCLUDE 16 STALLS SHOWN WITH CART CORRALS				
OVERALL SITE SUMMARY				



California Crossings

Aerial 2007

Client Name

File Name: n:\3315\mxd\3315-Aerial_fire.mxd

Date: 11/13/07

Source: Aerial - AirphotoUSA2007

GIS exhibits may be composed from various sources with different levels of accuracy. For details on accuracy of this exhibit please refer to Meta Data provided.

0 150 300 Feet



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Top photo; Looking East on site
Bottom photo: Looking Southeast



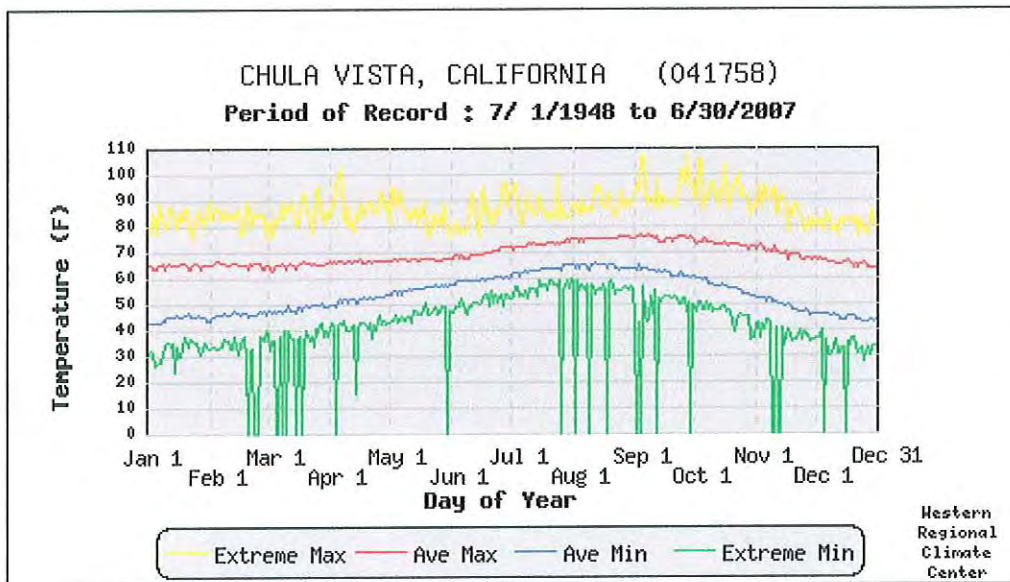
Top photo: looking South on site

Bottom Photo: Looking South to Otay Mesa Road



Looking Northwest on site







Modules: SURFACE, SPOT, IGNITE

Description	California Crossings ; Summer Fire	
Fuel/Vegetation, Surface/Understory		
Fuel Model		3
Fuel/Vegetation, Overstory		
Canopy Height	ft	3
Fuel Moisture		
1-h Moisture	%	3
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	
Live Woody Moisture	%	
Weather		
20-ft Wind Speed (upslope)	mi/h	20
Wind Adjustment Factor		0.4
Air Temperature	oF	95
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Wind Adjustment Factor [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

Probability of Ignition from a Firebrand (%) [IGNITE]
(continued on next page)



California Crossings; Summer Fire

Surface Rate of Spread (maximum)	290.5 ch/h
Flame Length	22.2 ft
Wind Adjustment Factor	0.4
Spot Dist from Wind Driven Surface Fire	0.8 mi
Probability of Ignition from a Firebrand	91 %

2.63 mph



Modules: SURFACE, SPOT, IGNITE

Description	California Crossings; Fall Otay Fire	
Fuel/Vegetation, Surface/Understory		
Fuel Model		3
Fuel/Vegetation, Overstory		
Canopy Height	ft	3
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	
Live Woody Moisture	%	
Weather		
20-ft Wind Speed (upslope)	mi/h	14
Wind Adjustment Factor		0.4
Air Temperature	oF	88
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Wind Adjustment Factor [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

Probability of Ignition from a Firebrand (%) [IGNITE]
(continued on next page)



California Crossings; Fall Otay Fire

Surface Rate of Spread (maximum)	208.8 ch/h
Flame Length	19.8 ft
Wind Adjustment Factor	0.4
Spot Dist from Wind Driven Surface Fire	0.6 mi
Probability of Ignition from a Firebrand	100 %

2.61 m/s



Modules: SURFACE, SPOT, IGNITE

Description	California Crossings; Fall Fire; high wind	
Fuel/Vegetation, Surface/Understory		
Fuel Model		3
Fuel/Vegetation, Overstory		
Canopy Height	ft	3
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	
Live Woody Moisture	%	
Weather		
20-ft Wind Speed (upslope)	mi/h	50
Wind Adjustment Factor		0.4
Air Temperature	oF	88
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Wind Adjustment Factor [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

Probability of Ignition from a Firebrand (%) [IGNITE]
(continued on next page)



California Crossings; Fall Fire; high wind

Surface Rate of Spread (maximum)	1077.9 ch/h
Flame Length	42.2 ft
Wind Adjustment Factor	0.4
Spot Dist from Wind Driven Surface Fire	2.3 mi
Probability of Ignition from a Firebrand	100 %

13.47 m/s



Modules: SURFACE, SPOT, IGNITE

Description California Crossings; Harris Fire estimates

Fuel/Vegetation, Surface/Understory

Fuel Model 3

Fuel/Vegetation, Overstory

Canopy Height ft 3

Fuel Moisture

1-h Moisture % 110-h Moisture %100-h Moisture %Live Herbaceous Moisture %Live Woody Moisture %

Weather

20-ft Wind Speed (upslope) mi/h 40Wind Adjustment Factor 0.4Air Temperature oF 93Fuel Shading from the Sun % 0

Terrain

Slope Steepness % 0Ridge-to-Valley Elevation Difference ft 0Ridge-to-Valley Horizontal Distance mi

Spotting Source Location

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always
for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Wind Adjustment Factor [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

Probability of Ignition from a Firebrand (%) [IGNITE]
(continued on next page)



California Crossings; Harris Fire estimates

Surface Rate of Spread (maximum)	923.1 ch/h	<i>11.53 m/s</i>
Flame Length	41.0 ft	
Wind Adjustment Factor	0.4	
Spot Dist from Wind Driven Surface Fire	2.0 mi	
Probability of Ignition from a Firebrand	100 %	

FORM DPLU # 399F; PROJECT AVAILABILITY FORM FOR FIRE PROTECTION



COUNTY OF SAN DIEGO
DEPT. OF PLANNING & LAND USE
5201 RUFFIN ROAD, SUITE B
SAN DIEGO, CA 92123-1000
(619) 552-5051 (619) 557-5770

PROJECT FACILITY AVAILABILITY FORM

FIRE

Please type or use pen		ORG _____	F
Otay Mesa Crossing, LLC c/o Rob Baker (510) 409-9915		ACCT _____	
Owner's Name _____ Phone _____		ACT _____	
3189 Danville Boulevard, Suite 245		TASK _____	
Owner's Mailing Address _____ Street _____		DATE _____ AMT \$ _____	
Alamo, CA 94507		DISTRICT CASHIER'S USE ONLY	
City _____ State _____ Zip _____			

SECTION 1. PROJECT DESCRIPTION

TO BE COMPLETED BY APPLICANT

- A. ☒ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☒ Minor Subdivision (TPM) ☐ Certificate of Compliance
Boundary Adjustment
Rezone (Reclassification) from _____ to _____ 2010.
Major Use Permit (MUP) purpose: _____
Time Extension... Case No. _____
Expired Map... Case No. _____
☒ Other Site Plan

Assessor's Parcel Number(s)
(Add extra if necessary)

6	4	6

2	4	0

6	8

- B. ☐ Residential Total number of dwelling units _____
☒ Commercial Gross floor area 307,900 sq ft
☐ Industrial Gross floor area _____
☐ Other Gross floor area _____

Thomas Bros. Page 1351 Grid J-1
east of SR 125 R/W, west of Heritage Rd.,
north of Otay Mesa rd
Project address _____ Street _____
East Otay Mesa Specific Plan
Community Planning Area/Subregion _____ Zip _____

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Robert Baker Date: 11/21/06
Address: 3189 Danville Boulevard, Suite 245, Alamo, CA 94507 Phone: 925-552-9742
(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below.)

SECTION 2: FACILITY AVAILABILITY

TO BE COMPLETED BY DISTRICT

District name San Diego Rural Fire Protection District
Indicate the location and distance of the primary fire station that will serve the proposed project: DCF Station 65

- A. ☒ Project is in the District and eligible for services.
☐ Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the District and not within its Sphere of Influence boundary.
☐ Project is not located entirely within the District and a potential boundary issue exists with the _____ District.
B. ☒ Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is _____ minutes.
☐ Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.
C. ☐ District conditions are attached. Number of sheets attached: _____
☒ District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by the Department of Planning and Land Use.

- ☒ Within the proposed project, 100 feet of clearing will be required around all structures.
☐ The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature: Deborah Bowers Inspector 619 669-1188 12/12/06
Print name and title Phone Date

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, Suite B, San Diego, CA 92123